DATA RATE

- Data rate in normal data taking extracted from Table of Background in our proposal (recent revision). This number are evaluated in the WIMP region and extrapolated with some assumption (that will be check) for energies outside it:
    * about 0.18Hz in window 20-100keV_rec = 12-57keV_ee: half of the rate is from Ar39 (assuming 1% level) that has 10% of its spectrum inside the window
    * about 1.8Hz in entire spectrum assuming it scales as 39Ar (assumption to be checked)

- Data throughput WITHOUT COMPRESSION in normal data taking:
    * 170GB/day (2 gains channels) (2MB/sec) in the energy of interest (16'000 ev/day) -> lossless compression 1/5 -> 34GB/day (0.4MB/sec) -> 20 minutes for analyze one day of data
    * 1.7 TB/day (2 gains channels) (20MB/sec) in entire spectrum (160'000 ev/day) -> lossless compression 1/5 -> 340GB/day (4MB/sec) -> 200 minutes for analyze one day of data

- Considering that the throughput for normal data taking is reasonable there is no need for fancy things. We can pass all the data to the PC and:
    * do filtering to acquire 1 event every x above a given S1 amplitude;
    * acquire the low gain channel only for those PMT that saturates the high

gain:

* if we have a perfect inter-calibration between low and high gain we can acquire on low gain only the region around the pulse that is saturating (S2 or S1);

CALIBRATION

- In case of STANDARD GAMMA CALIBRATION where the rate is higher it appears from yesterday considerations that we can handle the throughput anyway and some dead-time is not an issue.

- FOR ONE SHOT CALIBRATION TO CALIBRATE F90 we are interested to acquire about 10^9 events. This is a lot of data (10^7 GB without suppression) and we might want to:
  * Apply lossless compression -> 2000 TB (for analyzing 800 days)
  * chop the window of about a factor 30 acquiring only the first 10us? -> 72 TB (for analyzing 27days)
  * apply zero-suppression. (??????)
    If zero-suppression is ABSOLUTELY needed for this throughput we can decide to apply it ONLY to one shot calibration data. You might say that having calibration in one way and normal data in the other might be cause of systematics: I agree BUT WE SWEAR that we know exactly what zero-suppression is doing so we can apply an offline filter to normal data during the analysis to simulate the effect of zero-suppression and compare them with the data. On the other side if we have doubt about how zero-suppression works we cannot apply it also during normal data taking.

THESE SCHEME WOULD GIVE US THE POSSIBILITY OF HAVING UNTOUCHED WAVEFORMS AND A REASONABLE DATA THROUGHPUT.

S2 and S1 different sampling

- Having regions with different sampling might introduce systematics since we will have fraction of S2 with high sampling and fraction with low sampling.
- What about pileup events we are interested to? S1 of the second peak will be sampled very badly.
- Moreover, we might still be able to add an additional rejection method, based on a kind of pulse shape at the very beginning of S2. This approach will spoil this opportunity.